

App. Serial No 10/570,050
Docket No.: US030282US2

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Remarks

Claims 1-20 are currently pending in the patent application. For the reasons and arguments set forth below, Applicant respectfully submits that the claimed invention is allowable over the cited references as the Examiner has merely asserted a claim of obviousness without proper support. Specifically, the Examiner has improperly attempted to address claimed limitations by asserting that the claimed limitations would have been obvious without properly addressing the teachings of the prior art reference as a whole.

Applicant appreciates the courtesy afforded by the Examiner in the teleconference on August 21, 2007. The conversation was directed to Applicant's belief that the Sawada reference does not correspond to Applicant's claimed invention for the reasons articulated below.

In the final Office Action dated June 26, 2007, claims 1-20 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention; claims 1-2, 4-6, and 9-18 stand rejected under 35 U.S.C. § 102(b) over Sawada *et al.* (U.S. Patent No. 6,693,501); claims 3, 7-8, and 19-20 are further rejected under 35 U.S.C. § 103(a) over Sawada *et al.* (U.S. Patent No. 6,693,501).

Regarding the rejections of claims 1-2, 4-6, and 9-18 under 35 U.S.C. § 102(b) over Sawada *et al.* (U.S. Patent No. 6,693,501), Applicant respectfully submits that the 35 U.S.C. § 102(b) rejections cannot stand. The Sawada reference neither teaches nor suggests that the filters have different orders. Applicant notes that the Examiner attempted to address similar limitations with regard to the dependent claims (e.g., claim 6). Thus, Applicant has included a discussion that addresses the Examiner's rationale for rejecting those claims. Accordingly, the following discussion includes a brief review of the teachings of the Sawada reference for the purpose of clarifying why such limitations are not present in (nor obvious in view of) the teachings of the Sawada reference.

Applicant notes that the Sawada reference teaches two aspects regarding surface acoustical wave (SAW) filters. The first aspect is that one of the filters is 180 degrees out-of-phase with the other for the purpose of transitioning the signal from a balanced signal (one signal compared to a fixed reference) to an unbalanced signal (two varying signals compared to each other). See Sawada at Col. 1:36-47. To perform such a

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transition, the Sawada reference teaches the use of two nearly identical filtering paths for receiving and filtering a single, unbalanced input signal. The first signal path is taught to be different from the second signal path only with respect to the phase of the entire signal (i.e., rather than the phase of the passband ripple). Accordingly, Sawada teaches generating two nearly identical signals that are 180 degrees out of phase. Those different signal paths form a differential signal without discussion of whether the passband ripples are out of phase with one another. They are also not cascaded with one another. As such, this aspect of the Sawada filter would not cancel passband ripples because the passband ripples are present in opposite signal paths of a differential signal. Moreover, while each path may include two filters, neither filter within a path is taught with regard to the phase of the passband ripples between those two filters.

The second aspect taught by the Sawada reference is compensation for bulk waves in the SAW filter. These bulk waves produce passband ripples and result from undesirable affects of SAW filters. The Sawada reference teaches that these bulk waves are controlled by careful spacing of the different SAW filters and that this is an aspect that is distinct from the 180 degree phase characteristics necessary for converting between balanced and unbalanced signaling. *See, e.g.*, Sawada at Col. 49-56. The effects are not present in electrical filter circuits as they are caused by acoustical waves and reflections thereof.

A careful review of both aspects reveal that neither teaches nor suggests that both the order of the filters are different and that the passband filter ripples are out of phase with one another. Moreover, Applicant submits that one of skill in the art would not find applying different orders of filters to the Sawada reference obvious as there is no discussion of selecting different orders for filters in relation to their respective passband ripples. Accordingly, the rejections cannot stand and Applicant requests that they be withdrawn.

Applicant further notes that the Examiner has erroneously asserted that the term composite filter carries no patentable weight because it is found in the preamble. Applicant submits that regardless of the use of the term composite filter within the preamble, the term composite filter is found in the body of the claim. Accordingly, the Examiner's assertion that the preamble does not carry patentable weight is moot.

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Regarding the 35 U.S.C. § 103(a) rejections of claims 3, 7-8 and 19-20, Applicant respectfully traverses the rejections. The rejections are improper for at least the reasons presented in connection with claims 1-2, 4-6, and 9-18.

Moreover, the Examiner appears to be taking official notice in alleging that the use of digital filters and different order filters is well known for a surface acoustical wave filter. Applicant respectfully traverses this official notice because neither digital filters nor different orders of filter are taught nor appear relevant to a surface acoustical wave filter. In accordance to M.P.E.P. § 2144.03, the Examiner must provide with support for such an assertion where it is not capable of instant and unquestionable demonstration as being well-known. Specifically, the Examiner must show that both a digital filter and filters of different orders would have been obvious to implement in a surface acoustical wave filter of the Sawada reference. As discussed above, the Sawada reference is directed to a surface acoustic wave apparatus that implements two nearly identical filter paths. Such an apparatus performs filtering by the propagation of surface acoustic waves in a piezoelectric substrate. *See, e.g., Sawada, Summary of the Invention.* Moreover, the Sawada reference is directed to an unbalanced to a balanced conversion function with different impedance characteristics on each side of the conversion function. *See, e.g., Sawada, Field of the Invention.* The Applicant respectfully traverses the Examiner's official notice that different order functions and digital filters would commonly be used in such an application. In accordance to M.P.E.P. § 2144.03, the Examiner must provide with support for such an assertion.

Moreover, various assertions by the Examiner are illogical with respect to several of the claim limitations. For instance, Applicant submits that the aspects taught with respect to the SAW filter do not make sense in the context of a digital filter (*e.g., claims 3 and 13*). More specifically, Sawada teaches modifying the distance between filters so as to minimize the effect of bulk waves. Digital filters are not subject to bulk waves, nor are they affected by a physical distance in the manner taught by Sawada. Thus, the teachings regarding reduction of passband ripple (due to bulk waves) would be inapplicable and illogical in a digital filter.

Applicant respectfully traverses the 35 U.S.C. § 112, second paragraph rejections of claims 1 and 11. The Examiner expresses confusion as to whether the composite filter

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is different from the electronic circuit and cascaded filters. Applicant submits that claim 1 clearly indicates that the composite filter comprises the electronic circuit and that the electronic circuit includes cascaded filters. Thus, there can be no confusion as to their relationship as it is explicitly claimed. Applicant further submits that claim 11 is directed to a method in which filter circuits are provided in a circuit in order to minimize the passband ripple in the composite filter. Thus, the relationship between the claim limitations is clearly defined.

The Examiner has improperly rejected the claims based upon how the claim limitations read on the preferred embodiment taken from Applicant's specification. The Examiner is improperly using Applicant's specification as a basis for a 35 U.S.C. § 112, second paragraph rejection. Agreement, or lack thereof, between the specification is irrelevant to compliance with 35 U.S.C. § 112, second paragraph:

The content of applicant's specification is not used as evidence that the scope of the claims is inconsistent with the subject matter which applicants regard as their invention. As noted in *In re Ehrreich*, 590 F.2d 902, 200 USPQ 504 (CCPA 1979), agreement, or lack thereof, between the claims and the specification is properly considered only with respect to 35 U.S.C. 112, first paragraph; *it is irrelevant to compliance with the second paragraph of that section.* (emphasis added) M.P.E.P § 2172.

Accordingly, none of the 35 U.S.C. § 112, second paragraph, rejections have a proper basis because each of the claims meet the requirements of M.P.E.P. § 2171 in that they 1) set forth the subject matter that applicants regard as their invention; and 2) point out and distinctly define the metes and bounds of the subject matter. For these reasons, Applicant respectfully requests that the rejections be withdrawn.

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In view of the remarks above, Applicant believes that each of the rejections has been overcome and the application is in condition for allowance. Should there be any remaining issues that could be readily addressed over the telephone, the Examiner is asked to contact the agent overseeing the application file, Peter Zawilski, of NXP Corporation at (408) 474-9063 (or the undersigned).

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